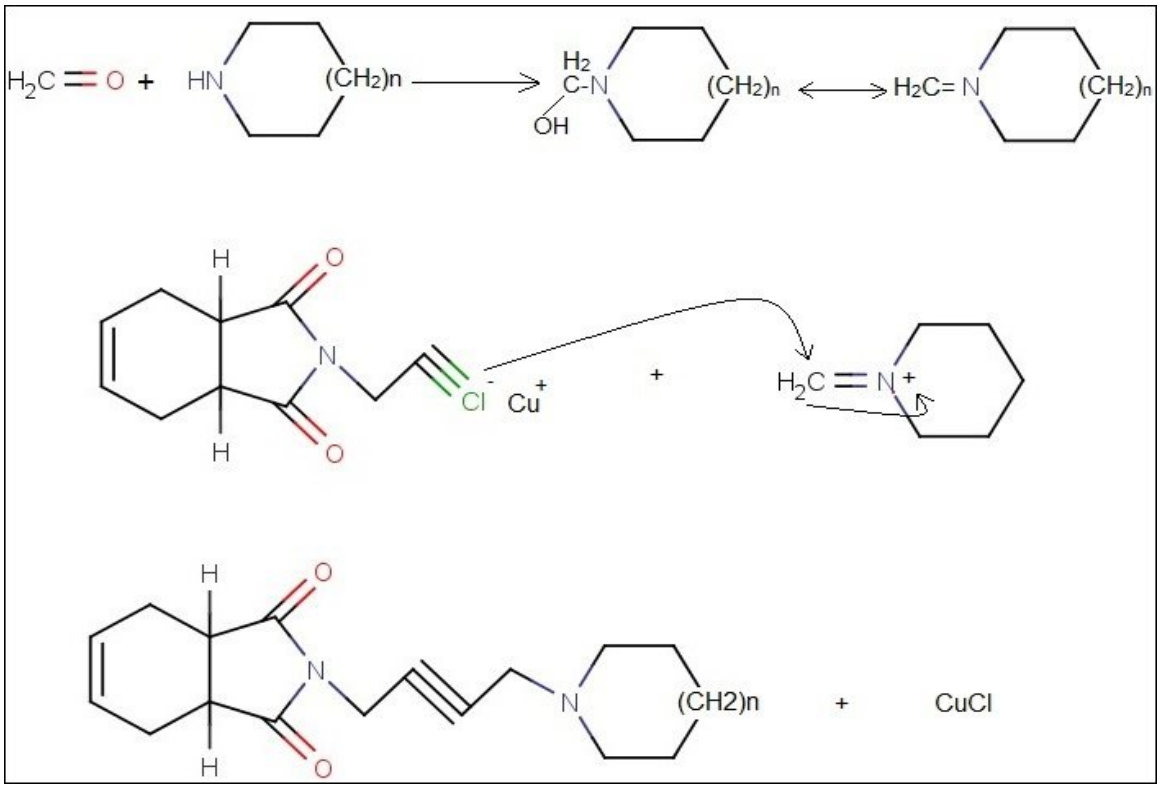

figure 4.1 proposed Mannich reaction.

The design of these compounds as COX inhibitors was based on the rationalization for the important criteria required to overlap effectively with COX and to induce antagonistic activity. These criteria are:

A basic amino group for ionic interaction, the aceltylenic group is for electrostatic interaction, the 2-butyne provides the appropriate distance between the basic nitrogen and *cis*-1,2,3,6 Tetrahydrophthalimide. Molecular docking results supported our assumption in the design of new and novel COX inhibitor. According to Duggan and his co-workers, NSAIDs bind to two key groups of amino acids in the COX-1 and COX-2 active site: Ser530 and Tyr385 in the top